

**P-63 (200)****PRELIMINARY ASSESSMENT OF CYTOLOGICAL CHARACTERS OF TWO EUROPEAN PEARS (PYRUS COMMUNIS L.) CULTIVARS**

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Pear (*Pyrus spp.*) is one of the most important pome crops in the world and Iran. The numerous pear cultivars are available and commercially cultivated in more than 50 countries in the temperate regions. European (*Pyrus communis* L.) and Asian (*Pyrus serotina* L.) pears are two major commercial pear species in the pear collection and commercial orchards. This experiment was conducted in order to explore the seed germination and further studying cytology of two European pear cultivars 'Dargazi' and 'Khoj' that usually used as pear rootstock in the pear orchards in Iran. Pear seeds were purchased from the commercial nursery in Mashhad in January 2017. Seed samples were washed, disinfected and treated with fungicide and kept in the moist in refrigerator at 4°C. Germinated seeds were transferred into petri dishes for chromosome and cytological studies during early April 2017. The end part of the emerging root including the root tip was used for further cytological investigation. The end part (0.5 cm) of the roots of 'Dargazi' and 'Khoj' cultivars were pretreated with  $\alpha$ -monobromonaphthalene for 20 minutes at room temperature then followed by washing pretreated root samples with enough distilled water for few minutes. For the fixation process and in order to fix or stop the chromosomes at the desired stage of cell division, the root samples were treated with Carnoy's solution including glacial acetic acid (1 part) and 100% ethanol (in 3 parts). Treated root samples were washed with distilled water after the fixation process. Roots samples were hydrolyzed for 10 minutes in 1N NaOH at 60°C followed by washing with distilled water. Hydrolyzed root samples were stained with aceto orsein. The images obtained by the present protocol used did not showed the clear chromosome numbers. Although, the obtained results showed a good germination for both cultivars used, so there was enough number of germinated seed samples for cytological study. In order to obtain the clear images for the chromosome numbers of the studied cultivars, research is ongoing and continues with using various desired preparation protocol for the root samples.

**Keywords:** European pear, Dargazi pear, Khoj pear, seed germination, chromosome